



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,728	10/27/2003	Tatsuya Fukunaga	117600	2392

25944 7590 08/15/2006

OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

LEE, BENNY T

ART UNIT	PAPER NUMBER
----------	--------------

2817

DATE MAILED: 08/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/693,728

Applicant(s)

FUKUNAGA, TATSUYA

Examiner

Benny Lee

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7, 15, 17, 19, 8, 16, 18, 20 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 11 and 12 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Stones et al or Deslandes et al (both of record).

Stones et al (Fig. 3) discloses an RF module comprising: a first waveguide (i.e. microstrip line 514) having a line pattern conductor (524) and an inherently underlying ground plane disposed on opposite faces of a dielectric substrate and configured for propagation in a TEM mode; a second rectangular waveguide (512) having upper and lower metal surfaces or electrodes electrically connected to each other and configured for propagation in a non-TEM mode. Note that the electrodes (516, 518) are configured into a vertical “stacking” direction and that line pattern conductor (524) is directly connected to electrode (516) in a direction orthogonal to the stacking direction. Moreover, since the configuration of the waveguides in Stones et al matches the configuration of applicants’ waveguides, the field configurations in Stones et al inherently must be the same as though in applicants’ invention, by virtue of their like configurations.

Deslandes et al (Fig. 1) discloses an RF module comprising: a first waveguide (i.e. a microstrip line) having a line pattern conductor and an underlying ground plane conductor or electrode disposed on opposing surfaces of a dielectric substrate to define a quasi-TEM mode of transmission; a second rectangular waveguide having upper and lower electrodes and opposing side electrodes connecting the upper and lower electrodes such as to define a non-TEM mode of

Art Unit: 2817

operation electrodes for the second waveguide. Note that the upper and lower electrodes are oriented in a vertical “stacking” direction and that the line pattern conductor of the microstrip line is directly connected to the upper electrode of the rectangular waveguide. Moreover, as is evident from Fig. 2, the electric field patterns of the microstrip line and the rectangular waveguide have the same orientation and profile, thereby providing a “match” with each other for transition purposes between the microstrip line and the rectangular waveguide.

Claim 2 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Deslandes et al (of record).

Note that the rectangular waveguide of Deslandes et al operates in a TE_{10} mode.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deslandes et al (of record).

Deslandes et al discloses the claimed invention except for the recitation of multiple modes.

Although the primary mode of propagation in Deslandes et al is the TE_{10} mode, clearly one of ordinary skill in the art would have found it obvious to have optimized the dimensions of the waveguide such as to have permitted additional propagating modes within the waveguide.

Applicant's arguments with respect to claims 1-3, 9-12 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2817

In particular, the previous indication of allowable subject matter in claim 4 (now canceled and the subject matter thereof incorporated into amended claim 1) by the examiner was premature. Accordingly, the claim 4 subject matter which was incorporated into amended claim 1 still does not make claim 1 allowable for the reasons set forth in the above rejection. The examiner regrets any inconvenience caused by such an oversight. Therefore, in view of the erroneous nature of the last Office action, this present Office action will not be made FINAL.

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 7, 15, 17, 19; 8, 16, 18, 20 are allowable over the prior art of record.

Any inquiry concerning this communication should be directed to Benny Lee at telephone number (571) 272-1764.

B. Lee


BENNY T. LEE
PRIMARY EXAMINER
ART UNIT 2817